REMARKS

This Amendment is filed in response to the Office Action dated April 27, 2010. For the following reasons this application should be allowed and the case passed to issue. No new matter is introduced by this amendment.

Claims 1-35 are pending in this application. Claims 6-35 were withdrawn pursuant to a restriction requirement. Claims 1-5 were rejected. Claim 1 is amended in this response to further clarify the present invention.

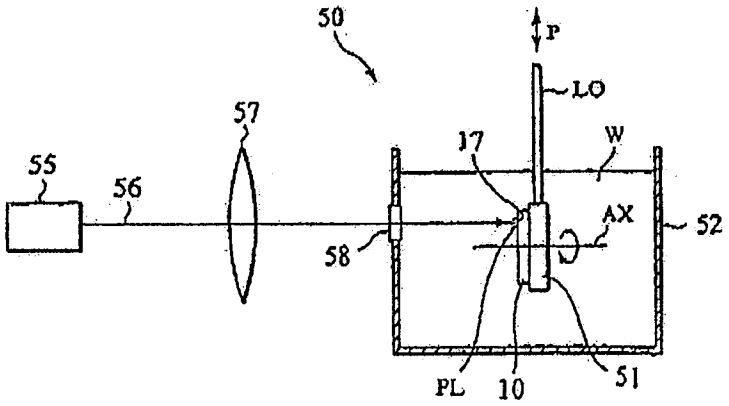
Claim Rejection Under 35 U.S.C. § 103

Claims 1-3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shimada et al. (US 2003/00201685) in view of Dulaney et al. (US 6,236,016). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the invention, as claimed, and the cited prior art.

Shimada et al. and Dulaney et al., whether taken in combination or taken alone, do not suggest the claimed rotor because the cited references do not suggest a bridge side on an inner circumference of a magnet insertion window passing through the rotor having a layer which is formed across an inner wall thereof and is work hardened due to a compression residual stress having added to the inner wall, the compression residual stress caused by applying a laser peening of irradiating at an angle relative to the inner wall of the bridge side on the inner circumference of the magnet insertion window with a laser through a liquid to transmit a shockwave resulting from a high pressure plasma produced over the inner wall by the laser to the inner wall, as required by claim 1.

The Examiner indicated that the bridge side of Shimada et al. has a layer which is formed across an inner wall. However, the laser according to Shimada et al. is orthogonally applied to a

surface of an electrical steel sheet 10, as shown in para. [0071] and Fig. 4 (reproduced below), and thus, the inner wall of the bridge side (16, 12) on an inner circumference of the magnet insertion window (2, 3) is not irradiated with the laser. Consequently, the bridge side according to Shimada et al. does not have a layer which is formed across the inner wall.



The present invention is further distinguishable over the cited references because the window (60) of Dulaney et al., to which laser peening is applied, is not a through-hole, but rather, is a recess, as shown in Fig. 7 (see also col. 6:61 - 7:4, reproduced below).

> FIG. 7 shows another example of utilization of the present invention, in which another lens 40 is utilized, i.e., a cylindrical lens, although other shapes may be utilized. Lens 40 is used to change the spot dimension S as laser beam 30 impacts within a recess 60 within workpiece 20. The shape of such recess 60 may be that of a blind bore, hole, slot, ridge, or other type of regular or irregular shaped recesses, in which it is desired to have laser shock processed areas therein. The oblique area processing of the present invention permits such uniform worked areas within the recess, regardless of the particular geometry.

In addition, the laser peening according to Dulaney et al. comprises applying a laser beam 30 normal to one of the surfaces of the workpiece 20 while applying laser beam 32 oblique to the other of the surfaces of the workpiece 20, provided that the laser beams are so controlled that the workpiece experiences substantially identical conditions on the opposite sides of the workpiece as shown in Figs. 4A, 4C, 5, and 6, claim 1, and the specification (col. 6:1-16).

As claimed by Dulaney et al.:

> 1. A laser processing method for processing a workpiece, the method comprising the steps of:
> applying a laser beam substantially normal to the workpiece;
> applying a laser beam substantially oblique to the workpiece on a substantially opposite side thereof; and
> controlling said laser beams so that the workpiece experiences substantially identical conditions on said substantially opposite sides of the workpiece.

Further, as explained in the Dulaney et al. specification (col. 6:1-16):

> The laser shock peening process as shown in an embodiment of FIG. 4A, shows an incoming laser beam 30, oblique to a workpiece 20 at an angle Θ having a similar laser beam 32 shown impacting a substantially opposite and equal area on an opposite side of workpiece 20. Laser beam 32 impacts workpiece 20, essentially normal to its respective surface. A means for correcting the incident area created by laser beam 30, is shown in FIG. 4A as, in one form, a lens 40. In the embodiment shown in FIG. 4A, lens 40 may be that of a cylindrical-type lens to change the dimension of the incident spot in one axis. Such incident spot shown in FIG. 4B as 42, has the same size spot as that being created via laser beam 32. A control mechanism 44 is utilized to vary the effective refraction and/or location of the shape changing means 40 to ensure that the impact spot 42 is shaped substantially similar to the opposite one created by laser beam 32.

Therefore, the Examiner alleged teaching of oblique radiation with laser beam 32 of Dulaney et al. cannot be extracted from the teaching Dulaney et al. and combined with Shimada et al. to achieve the present invention. Furthermore, unlike the present invention, Dulaney et al. teach irradiating both sides of the workpiece because Dulaney et al. teach a recess, not a through-hole. Therefore, the teachings of Dulaney et al. would further not have been combined with Shimada et al. to obtained the claimed rotor. One of ordinary skill in this art would not have been motivated to combine the selected teachings of Dulaney et al. and Shimada et al., as asserted by the Examiner, to obtain the claimed rotor. In view of the disparate teachings of Shimada et al. and Dulaney et al., it is readily apparent the asserted combination is rooted in impermissible hindsight reasoning in view of Applicants' disclosure.

Claims 4 and 5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shimada et al. in view of Dulaney et al. and Edwards et al. (US 6,848,495). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

Dependent claims 4 and 5 are allowable for at least for the same reasons as independent claim 1, and further distinguish the claimed rotor. Edwards et al. do not cure the deficiencies of Shimada et al. and Dulaney et al., as Edwards et al. do not suggest a bridge side on an inner circumference of a magnet insertion window passing through the rotor having a layer which is formed across an inner wall thereof and is work hardened due to a compression residual stress having added to the inner wall, the compression residual stress caused by applying a laser peening of irradiating at an angle relative to the inner wall of the bridge side on the inner circumference of the magnet insertion window with a laser through a liquid to transmit a shockwave resulting from a high pressure plasma produced over the inner wall by the laser to the inner wall, as required by claim 1.

The dependent claims are allowable for at least the same reasons as claim 1 and further distinguish the claimed rotor.

In view of the above amendments and remarks, Applicants submit that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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